

USSR

UDC 621.039.534:539.219.1(088.8)

ARNOL'DOV, M. N., IVANOVSKIY, M. N., PLESHIVTSEV, A. D.

"Method for Determining Admixtures in Liquid Metal"

Sposob opredeleniya primesey v zhidkom metalle (cf. English above), Authors  
Certificate USSR, Class G 01 n 33/20, No. 335607, Announced 12 Oct 70,  
Published 12 May 72 (from RZh-50. Yadernyye reaktory, No 11, Nov 72,  
Abstract No 11.50.135 P)

Translation: The invention concerns methods for controlling the content of admixtures in liquid metals used as coolants in nuclear reactors. The method is distinguished by the fact that the coolant in the indicator is cooled monotonically by the cooler. When the coolant temperature becomes equal to the temperature of saturation by its admixture, the latter is crystallized into a residue which is caught in openings of the indicator. In the proposed method the rate of clogging of the indicator and the temperature of the beginning of clogging are measured. The rate of clogging depends on the form of the admixture going into precipitate, other conditions being equal.

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Nuclear Science and Technology

USSR

UDC 621.039.566:669.054(088.8)

ARNOL'DOV, M. N., IVANOVSKIY, M. N., FILIPPOV, I. T., and SHMATKO, B. A.,

"A Crystallizer-Accumulator"

USSR Authors Certificate No 275247, filed 13/11/68, published 22/10/70 (translated from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.31 P)

Translation: A crystallizer-accumulator is patented for purification of liquid metal heat-transfer media of impurities and corrosion products in a system consisting of a cooled body and pipe lines for supply and drainage of the heat-transfer medium. In order to improve purification by creating agitation of the flow of the heat transfer-medium, the internal surface of the cooled body carries a number of parallel ribs made of a material with high heat conductivity, equipped with an aperture for passage of the heat-transfer medium.

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Nuclear Science and Technology

USSR

UDC 621.039.566:669.054(088.8)

ARNOL'DOV, M. N., IVANOVSKIY, M. N., FILIPPOV, I. T., and SHMATKO, B. A.,

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1/1

1/2 043 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--SOLUBILITY OF GASES IN A SODIUM AND POTASSIUM EUTECTIC ALLOY -U-  
AUTHOR--(05)--ARNOLDOV, M.N., IVANOVSKIY, M.N., MGROZOV, V.A., PLETENETS,  
S.S., SUBBOTIN, V.I. *A*  
COUNTRY OF INFO--USSR  
SOURCE--AT. ENERG. 1970, 28(1), 18-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--SODIUM ALLOY, POTASSIUM ALLOY, EUTECTIC, ALKALI METAL,  
HYDROGEN, ARGON, SOLUBILITY, GAS PROPERTY, LIQUID METAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1995/1321 STEP NO--UR/0089/70/028/001/0018/0022  
CIRC ACCESSION NO--AP0116781  
UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116781

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. USED TO MEASURE THE SOLY. C OF GASES IN MOLTEN ALKALI METALS IS DESCRIBED. THE C OF H SUB2 IN A 78.2 WT.PERCENT K-21.8 WT.PERCENT NA ALLOW IS DESCRIBED BY THE EQUATION  $\log (C \text{ TIMES } 10 \text{ PRIME}^4) \text{ EQUALS } 6.43 \text{ MINUS } (2670-T)$ , WHERE C IS IN WT.PERCENT AND T IS THE TEMP., (DEGREESK); THIS EQUATION IS VALID FOR H SUB2 CONCN. BELOW THE SATN. POINT, I.E., WHEN THE RELATION BETWEEN THE H SUB2 CONCN. AND (P) PRIME<sup>0.5</sup> (WHERE P IS THE H SUB2 PRESSURE OVER THE ALLOY) IS LINEAR. AT 300DEGREES, LOG C FOR N SUB2, HE, AND AR IN THE ABOVE ALLOY (WHERE C IS ATOM FRACTION-KG-CM PRIME<sup>2</sup>) UNDER 1 ATM IS MINUS 4.3, MINUS 4.9, AND MINUS 5.1, RESP.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--HYDROGEN IMPURITY IN A MOLTEN EUTECTIC ALLOY OF SODIUM AND  
POTASSIUM -U-  
AUTHOR--(04)-ARNOLDOV, M.N., IVANOVSKY, M.N., MUROZOV, V.A., PLETENETS,  
S.S.  
COUNTRY OF INFO--USSR  
SOURCE--TEPLOFIZIKA VYSOKIKH TEMPERATUR, JAN.-FEB. 1970, 1, (1), 88-92  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--SODIUM ALLOY, POTASSIUM ALLOY, HYDROGEN, EUTECTIC MIXTURE,  
OXYGEN, CHEMICAL BONDING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0203 STEP NO--UR/0294/70/008/001/0088/0092  
CIRC ACCESSION NO--AP0123972

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123972

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSSIBLE FORMS IN WHICH H IMPURITY MAY OCCUR IN THE DISSOLVED STATE IN MOLTEN EUTECTIC NA, K ALLOYS ARE DISCUSSED THEORETICALLY AND COMPARED WITH EXPERIMENT. THE EQUILIBRIUM PRESSURE OF H OVER SUCH ALLOYS MAY BE MATERIALLY AFFECTED BY OTHER CHEMICALLY ACTIVE IMPURITIES SUCH AS O AND LI. IN ALL CASES OBSERVED EXPERIMENTALLY, HOWEVER, THE H APPEARED TO OCCUR IN SOLUTION MAINLY IN THE ATOMIC FORM, ALTHOUGH THERE WAS ALSO A TENDENCY FOR SOME OF THE H ATOMS TO BECOME ATTACHED TO O OR LI ATOMS.

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USSR

UDC 632.95

ARNOL'DOV, Ye. M., MITYAKINSKIY, V. I., GLADILIN, I. N., YAKUBA, A. R.,  
KOSTITSIN, B. A., KİYASHKO, V. K., KAZ'MIN, M. F., SHUL'MAN, V. N.

"A Method of Making the Discharge Form of Copper 2,4,5-Trichlorophenoxide"

USSR Author's Certificate No 345121, filed 14 Feb 69, published 9 Aug 72  
(from RZh-Khimiya, No 9, May 73, abstract No 9N509P by T. G. Chekareva)

Translation: A method is proposed for making a commercial form of copper, 2,4,5-trichlorophenoxide (I) used in making poisons. A wet paste of compound I is filtered, pressed to a moisture content of 50-55%, loaded into a crank mixer, and mixed with talc and kaolin in a ratio of 1:1:2 respectively. The mixture is agitated for 1-2 hours. It is then loaded as a powder containing 16-20% moisture into a drier with a fluidized bed of inert material. The degree of moisturizing of the dry product in the cyclone is of the order of 96-97%.

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USSR

UDC: 8.74

AROLOVICH, V. S., MIKHALYOV, V. M.

"Algorithm for Diagnosis of Dead Ends"

Zh. vychisl. mat. i mat. fiz., 1972, 12, No 6, pp 1543-1553  
(from RZh-Kibernetika, No 5, May 73, abstract No 5V783 by  
the authors)

Translation: An analysis is made of dead ends, i. e. situations in which some of the problems solved on a computer in a multiprogram mode cannot continue their solution due to mutual dependences. It is proved that if the dependences of the problems are represented by a system of equations and their left parts are multiplied, then the problems which fall into a dead end can be determined from the form of the resultant product. In terms of a matrix constructed from this system of equations, an algorithm is formulated which enables finding the minimum sets of problems whose completion by special means, or elimination from the number of solved problems does away with a dead end in the system. The presentation is illustrated by examples.

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Oscillators and Modulators

USSR

UDC: 621.374.42

ARON, A. Ya. and FOMIN, N. N.

"Phase-Frequency Characteristics of a Regenerative Frequency Multiplier Using a Tunnel Diode"

Moscow, Radiotekhnika, No 9, 1972, pp 46-49

Abstract: The purpose of this article is to set up the phase-frequency characteristics of a frequency multiplier using a tunnel diode oscillator synchronized to a subharmonic. This circuit, which has a number of advantages over resonance frequency multipliers now in general use, was investigated by the authors named above in an earlier paper published in the same journal (vol 27, No 6, 1972). In the present paper, the authors use, to determine the phase-frequency characteristics of the circuit, the shortened equations describing the oscillator with a short-circuited line segment equivalent to the inductance, with the nonlinearity of the tunnel diode capacitance taken into account. An equivalent circuit of the frequency multiplier is shown, and the phase-frequency characteristics are plotted for various values of the external signal amplitude. The device has broad synchronization bands and can multiply the frequency of signals with large deviations at low distortion.

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Devices

USSR

UDC 621.374.42

FOMIN, N.N., ~~ABON, A.YA.~~ [Members, Scientific-Technical Society Of Radio Engineering, Electronics, And Communications imeni A.S. Popov]

"Regenerative High Multiplicity Factor Frequency Multiplier Based On A Tunnel Diode"

Radiotekhnika, Vol 27, No 6, June 1972, pp 88-90

Abstract: A choice of parameters is considered for a generator based on a tunnel diode, during its use as regenerative high multiplicity factor frequency multiplier. Experimental data are presented which show that on the basis of generators with high-current high-frequency tunnel diodes, designed for maximum power yield, it is possible to create a frequency multiplier for the decimeter and centimeter range. 3 fig. 6 ref. Received, 19 January 1971.

1/1

USSR

UDC 621.762.002.5(088.8)

ARON, P. M., YAMNITSKIY, E. L., KUMMING, S. YA., and ISTOMIN, V. A.

"Apparatus for Treatment of Powdered Materials"

Ussr Authors' Certificate No 259690, Cl. 81e, 11; 21g 31/03. (B 65 j, H 01 F),  
filed 26 Aug 68, published 2 Jun 70 (from Metallurgiya, No 3, Mar 71,  
Abstract No 3G472 by O. Padalko)

Translation: The initial charge for thermochemical production of ferrite powder is delivered from a hopper onto a rotating disk and travels on it to the reaction chamber. An ignition device in the chamber submerges into the charge layer and ignites it. When the combustion front goes beyond the confines of the chamber, the drive switches on, and a new charge batch moves into the chamber. Removal of the powder leaving the chamber is effected by a scraper.

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USSR

UDC 621.396.6:621.318(088.8)

*A*  
ARON, P. M., RYABKOVA, L. D., YERASTOVA, V. I.

"A Method of Producing Ferrite Powders"

USSR Author's Certificate No 252498, Filed 15 Jan 68, Published 13 Feb 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V409 P)

Translation: The proposed method of producing ferrite powders by crushing a mixture of initial oxides and annealing the mixture with subsequent pulverization is distinguished by the fact that the activity of the powders is increased by adding to the mixture of initial oxides up to 5 wt.% ammonium sulfate, and annealing the mixture at the temperature of interaction between ammonium sulfate and the oxides for five hours, followed by a raise in temperature to 800-1,000°C.

1/1

ARONE, R.G.

metallurgy

TENDENCY OF LOW-ALLOY STEELS TO COLD-SHORTNESS FOR METALLIC STRUCTURES

UDC 539.56:669.15-194

[Article by V.A. Balin, R.G. Arone, P.I. Sokolovskiy; Novosibirsk, Khimicheskoye Stali i Stalinykh Konstruktsiy, Russian, signed to press 6 August 1970, pp. 21-23]

The amount of structural work in the eastern and the northern regions of the nation is growing especially fast at the present time. In this connection, one of the real problems in "construction" metal research is seeking economically effective steels with a low threshold of cold-shortness, as well as the development of methods for a more complete evaluation of this property.

The most widely-used method of evaluating the tendency of one or another steel to cold-shortness is the method based on determining the impact strength in the temperature range from +20° and below.

A whole series of AUST norms reflect this method, according to which the minimally allowable values of the impact strength are established that are determined on test bars of type I (according to AUST 9454-60) at fixed temperatures.

Because of the spread of the method of impact tests and their "conventionality" a huge amount of material has been collected on the dependence of impact strength of type I test bars on temperature for steels used in various branches of industry and construction. This gives a broad base for a qualitative comparison of steels among themselves.

For convenience of comparison of the various brands of steel among themselves for the temperature of the conventional threshold of cold-shortness ( $T_3$ ) we take the temperature at which the lower boundary of the scattering intersects the values  $\sigma = 3 \text{ kg/mm}^2$ .

1/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ESTIMATING THE BRITTLENESS OF STEEL BY REFERENCE TO THE FORM OF THE  
FRACTURE -U-  
AUTHOR--(05)-ARONE, R.G., BERNSHTEYN, S.V., SOKOLOVSKY, P.I., RAKHMANOV,  
A.S., SITNOVA, N.V.  
COUNTRY OF INFO--USSR  
SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (1), 70-72  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--METAL BRITTLENESS, MATERIAL FRACTURE, BIBLIOGRAPHY, PLASTIC  
DEFORMATION, CARBON STEEL, ALLOY STEEL, MICROSCOPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0861 STEP NO--UR/0129/70/000/001/0070/0072  
CIRC ACCESSION NO--AP0124524  
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124524

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADVANTAGES AND DISADVANTAGES OF ESTIMATING THE BRITTLINESS OF C AND ALLOY STEELS BY ANALYSING THE FORM OF THE FRACTURE IN TENSIL TEST SAMPLES ARE DISCUSSED. ANY ESTIMATE OF THE ENERGY CAPACITY OF THE RUPTURE PROCESS BASED SOLELY ON THE EXTERNAL APPEARANCE OF THE FRACTURE IS VERY ROUGH, SINCE IT TAKES NO ACCOUNT OF MICROSCOPIC PLASTIC DEFORMATIONS.

UNCLASSIFIED

AA0052684

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 2-70

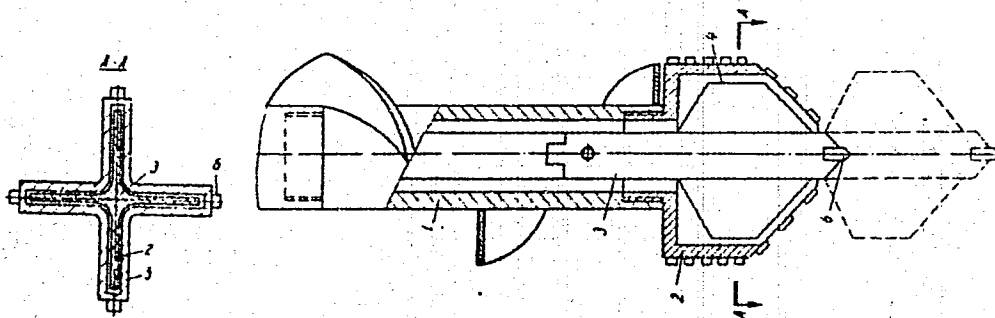
243537 DRILL simultaneously shear-tests ground  
at any depth in disturbed conditions and  
varying consistencies: the hollow housing (1) has  
a three or four blade bit (2) and encloses the  
axially free bar (3) whose bottom end terminates  
in the vaned wheel (4). This wheel lies in a  
cruciform cavity provided in the bit (5), thus  
protecting the wheel during drilling. The lower  
end of the wheel protrudes beyond the bit and  
carries a rectangular blade or cutter (6) which  
protects the cone from wear during drilling. The  
drive (not indicated) is at the upper end of the  
axial bar.

26.1.68. as 1213313/29-14, ARONOV, A.B. and  
LEBEDEV, V.I. "Energoset'proekt" Res. & Des. Inst.  
(24.9.69) Bul. 17/14.5.69. Class 5a, 42k Int.  
Cl. E 21b, G 01f.

19821461

AA0052684

Vsesoyuznyy Gosudarstvennyy Proyektno-Izyskatel'skiy i  
Nauchno-Issledovatel'skiy Institut "Energoset'proyekt"



19821462

ARONOV, A. G.

ABSTRACTS OF REPORTS PRESENTED AT THE FIRST ALL-UNION  
CONFERENCE ON METAL-DIELECTRIC PHASE TRANSITIONS

JPRS 57631  
30 November 1972

Excerpts from Russian-language book: Sbornik Nauchnykh Soderzhanii Dokladov, predstavivnykh Na I Vsesoyuznyy Konfertsiiy po Metal-Dielectric Phase Transitions, 1972, Academy of Sciences USSR, Ministry of Higher and Secondary Specialized Education USSR, Institute of Moskovskogo Universiteta, Moscow, pp 8-10, 10-12, 15-17, 18-25.

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[I - USSR - I]

ARONOV, A.G.

JPRS 57631  
30 Nov. 1972

METAL-DIELECTRIC PHASE TRANSITIONS OF BISH ALLOYS IN STRONG MAGNETIC FIELDS  
[Article by N. B. Brant, Ye. A. Svistov, Moscow State University, Physics Department, pp 8-10]

Presented in this paper are the results of a study of the magnetic resistance of specimens with small controlled overlapping of zones and controlled energy slit, i.e., of metallic and semiconductor alloys of bismuth and antimony in which the antimony concentrations vary up to 22%, in pulsed magnetic fields up to 700 kG in the 2-77°K temperature range, the purpose of which was to discover effects related to qualitative changes in the energy spectrum of the specimens in the ultranquantum region of magnetic fields.

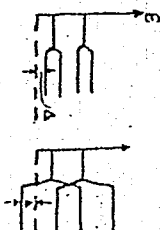


Figure 1.

Quantization of carrier energy and the spin distribution of the energy levels in the magnetic field lead to displacement of the boundaries of the energy zones (Figure 1).

In the ultranquantum region the displacement of zone boundaries (A) reaches a magnitude comparable to or greater than the Fermi energy in the zones of the metals or the energy slit in semiconductors. Here electron transitions may occur, depending on the ratio of the spin and orbital masses of the carriers.

2. Frohlich, H., J. Phys. C., Ser. 2, Vol. 1, p. 544, 1968.

3. Kolobash, L. V. and Yu. V. Kopyev, FTT (Fizika tverdogo tela Solid State Physics), Vol. 6, p. 2791, 1964.

# LIGHT ABSORPTION IN $V_2O_3$

[Article by G. O. Andrianov, A. G. Anonov, T. V. Salmova, T. A. Chudakovskiy, pp 18-23]

At  $T_c = 150^\circ K$  there occurs in  $V_2O_3$  a metal-insulator phase transition [1]. This is a first order transition with a rearranged lattice.

At this time there is no theory to explain the mechanism of phase transition in  $V_2O_3$  [2-4], since it is difficult to explain the entire set of experimental facts. A model was proposed [5] in which the metal-insulator in approximation of a strong bond can be related to instability in the motion of electron perturbations. This viewpoint was confirmed in [6]. In this connection it seemed worthwhile to analyze the optical properties of  $V_2O_3$  near the fringe of natural absorption, since the literature does not contain much reliable information on this subject [1, 7, 8].

Measurements of the absorption coefficient were done in specimens cut from two monocrystalline  $V_2O_3$  ingots in such a way that the second order axis of symmetry  $\vec{C}$  would always be perpendicular to the propagation of light.

The curves of the dependence of the absorption coefficient  $\alpha$  on energy  $h\nu$  are shown in Figure 1 for two polarizations of incident light ( $\alpha_{||}$  for  $E \parallel \vec{C}$ ,  $\alpha_{\perp}$  for  $E \perp \vec{C}$ ) at  $T = 93^\circ K$ . In calculating  $\alpha$  the reflection coefficient  $R$  was assumed to be 0.3. The absorption coefficient is practically independent of temperature in the 90-135°K range. At  $T = 137^\circ K$  a sharp reduction of  $\alpha$  was noted, which apparently is related to the coexistence of two phases near  $T_c$ . The phenomenon of coexistence of two phases was first observed in [9] as a result of nuclear magnetic resonance measurements. Analysis of the polished surface of our specimens under a metallographic microscope near the phase transition point revealed gradual darkening of part of the specimen, which spread through the entire specimen as the temperature rose. The opposite situation occurred when the temperature rose. This is also indirect confirmation of the coexistence of two phases near  $T_c$ .

Figure 1 shows that the absorption coefficient in  $V_2O_3$  is quite anisotropic, but its dependence on photon energy has the same general outline for both polarizations. A maximum lying near different energies for the two polarizations fits a strong monotonic increase of the absorption coefficient. For  $E \parallel \vec{C}$  the maximum lies near  $h\nu_{max} = 0.2$  eV and is very

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UDC[537.226+537.311.33]:[537+535]

ARONOV, A. G., GUREVICH, V. G., and LAYKHTMAN, B. D.

"Peculiarity of Phase Transition in Ferroelectric Semiconductors"

V sb. Materialy 6-y Zimney shkoly po teorii yadra i fiz. vysok. energii, 1971, Ch. 3 (Materials of Sixth Winter School on Nuclear Theory and High-Energy Physics, 1971, Part 3 -- Collection of Works), Leningrad, 1971, pp 125-136 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1247 by M. A. ITSKOVSKIY)

Translation: The authors consider the behavior of electron gas in ferroelectric semiconductors. It is shown that as the second-order phase-transition point is approached from the direction of high temperatures ( $T > T_c$ ,  $T_c$  = transition temperature), electron interaction results in an infinite increase in specific heat according to the law  $\Delta c \sim (T - T_c)^{-1/2}$ . This qualitative conclusion regarding the electronic intensification of the specific heat feature also holds for uniaxial crystals, except with a different law of increase,  $\Delta c \sim (T - T_c)^{-3/2}$ . It is pointed out that quantitative theory requires the consideration of electron-phonon interaction, for which the same type of dependence of the specific heat feature is obtained as for the Debye term, except with a greater coefficient. The effect on the peculiarity of the behavior of the specific heat of dopant ions is also discussed.

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AA0040642

ARONOV A.I.

UR 0482

3

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

241569 ELECTRO-MACHINE OF METALS by current pulses in a liquid medium containing carbon, according to the parent patent No. 196209, is improved by applying onto the working electrode, prior to the machining, a protective carbon-containing layer by pyrolysis of the liquid medium, which may be effected by heating the working surface of the electrode to 700-1000°C in an electric arc or furnace and, then, contacting it with the carbon-containing liquid medium. By this method, the durability of an electrode made e.g. of copper, is improved and the wearing of graphitized electrodes is reduced over the whole range of working conditions. The efficiency of the electrode is high.

30.3.64 as 891578/25-8 Add to 196209. A.L.LIVSHITS et alia. METAL-CUTTING MACHINES INST. et al.(28.8.69) Bul 14/18.4.69. Class 21h. Int.Cl.H 05b.

19750216

AA0040642

AUTHORS: Livshits, A. L.; Roze, L. V.; Zingerman, A. S.; Kravets,  
A. T.; Sosenko, A. B.; Aronov, A. I.; and Polotskiy, V. Ye.

Eksperimental'nyy Nauchno - Issledovatel'skiy Institut  
Metallorazhishchikh Stankov i Zavod "V E F"

19750217

7/2

ARONOV A. I.

AA0040678

UR 0482

3  
1-70

Soviet Inventions Illustrations

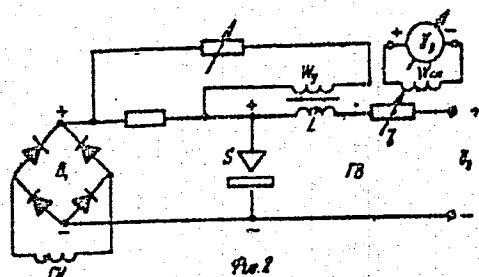
Chemical, Derwent,

241570 ELECTRIC EROSION DEVICE for machining hard metals submerged in liquids was improved by providing an auxiliary generator to maintain a dynamic equilibrium during the breakdown and re-establishment of a protection layer of the machining electrode. The control elements of this generator are made in the form of an active or inductive and capacitive resistances and are connected in series with the rectifier current source.

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AUTHORS: Livshits, A. L.; Roze, L. V.; Zingerman, A. S.; Kravets, A. T.; Sosenko, A. B.; Aronov, A. I.; and Polotskiy, V. Ye. (Eksperimental'nyy Nauchno - Issledovatel'skiy Institut Metallorazhushchikh Stankov i Zavod "V E F")

AA0040678



30.3.64 as 891578/25-8. A.L.LIVSHITS et al. METAL  
CUTTING MACHINE TOOLS RES. INST. (8.9.69) Bul 14/18.  
4.69. Class 21h. Int. Cl. H 05b.

13750285

USSR

UDC: 533.697

ARONOV, B. M., DENISOV, I. N., TSYBIZOV, Yu. I.

"Investigation of a Supersonic Ejector Nozzle With Short Mixing Chamber"

Tr. Kuybyshev. aviats. in-t (Works. Kuybyshev Aviation Institute), 1970, vyp. 45, pp 60-70 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B445)

Translation: The paper presents the results of an experimental study of an ejector nozzle with a short mixing chamber of cylindrical shape. The measurement of static pressure revealed the physical flow pattern. The thrust characteristics of a subsonic nozzle, and of a nozzle with and without natural ejection are shown in comparison. Bibliography of 10 titles. Resumé.

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USSR

UDC 629.7.036.3:533.697.4

ARONOV, B. M., DENISOV, I. N., TSYBIZOV, YU. I.

"Study of a Supersonic Ejector Nozzle With a Short Mixing Chamber"

Tr. Kuybyshev aviats. in-t (Works of Kuybyshev Aviation Institute), 1970,  
No. 45, pp 60-70 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4,  
Apr 72, Abstract No 4.34.95)

Translation: An experimental study of an ejector nozzle with a short mixing chamber of cylindrical shape is described. Measures taken to measure the static pressures made it possible to determine the approximate physical picture of the flow. The thrust characteristics of a subsonic nozzle and a nozzle with and without natural ejection are given for comparison. 7 ill., 10 ref. Resume.

1/1

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USSR

UDC: 621.382.23

ARONOV, D. A., MAMATKULOV, R.

"Concerning the Q of Diffusion Capacitance of a p-i-n Diode on a Strong Harmonic Signal"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 11, Nov 72, pp 2379-2383

Abstract: The Q of diffusion capacitance of a semiconductor diode on a strong harmonic signal in the double injection mode is calculated by using expansions in a Fourier series. Analysis of the frequency dependence of the Q shows that a p-i-n diode biased on the Hall segment of the current-voltage characteristic can be used as a highly effective parametric frequency multiplier.

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USSR

UDC 539.293:621.382/383

ADIROVICH, E. I., ARONOV, D. A., and YUNUSOV, N., Physicotechnical Institute  
imeni S. V. Starodubtsev, Academy of Sciences Uzbek SSR

"On the Theory of an Optoelectronic Regenerative p-n-p Structure"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh  
Nauk, No 1, 1972, pp 50-57

Abstract: The article develops the theory of a monoblock regenerative optron based on three-layer (p-n-p) transistor structures. A p-n-p structure with a radiative p-n junction as emitter and a photosensitive collector junction is considered. The current-voltage characteristic of such an optron is considered. It is shown that the shape of the current-voltage characteristic (particularly its characteristic points) can be controlled by varying the series resistance of the structure. The IV characteristic can be controlled also by external illumination, the spectral composition of which corresponds to the absorption in the collector junction.

1/1

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1/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--REACTIVE PROPERTIES OF P,N,N PRIME POSITIVE STRUCTURES WITH  
ULTRALONG BASES AT HIGH DIRECT CURRENT DENSITIES -U-

AUTHOR--(03)-ARONOV, D.A., KOTOV, YA.P., KOTOV, YE.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK UZV. SSR, SER. FIZ.-MAT. NAUK 1970, 14(2), 43-6

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--FREQUENCY CHARACTERISTIC, ELECTRIC FIELD, CARRIER DENSITY,  
HOLE MOBILITY, FREE PATH, SEMICONDUCTOR JUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1007

STEP NO--UR/0166/70/014/002/0043/0046

CIRC ACCESSION NO--AP0124666

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0124666

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. SOME FREQUENCY PROPERTIES OF P,N,N PRIME POSITIVE STRUCTURE ARE ANALYZED BY TAKING INTO ACCOUNT THE EFFECT OF THE ELEC. FIELD IN A SUPERLONG BASE (W-L SUBP GREATER THAN 10) ON THE DISTRIBUTION OF CURRENT CARRIERS. THE INSULATOR CASE IS STUDIED, I.E. THE ELEC. FIELD IN THE BASE CHANGES SUBSTANTIALLY AND HAS A CLEARLY EXPRESSED MAX. LOCATED APPROX. IN THE MIDDLE OF THE BASE. THE EFFECT OF SOME PARAMETERS OF THE STRUCTURE ON Q FACTOR IS CONSIDERED, ESP. OF THE "LENGTH" OF THE BASE W-L SUBP (L SUBP IS THE MINORITY CARRIER DIFFUSION LENGTH). FACILITY: FIZ.-TEKH. INST. IM. STARODUBTSEVA, TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

ARONOV, G. SHEGLOV, V.

"Information Coding and Associative Data Retrieval"

V sb. Elektronno-vychisl. tekhn. i programir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 73-79 (from EZh-Kibernetika, No 1, Jan 72, Abstract No LV1000)

Translation: Some new codes are described which can be used as correcting codes in data transmission systems and in associative retrieval systems. Results are presented from comparison of a code in which redundant symbols correspond to the sum of ones or zeros among the information symbols, with various codes, specifically with a "four-out-of-eight" code. It is found that in some instances it is advisable to use the proposed code with summation whose redundant symbols are expressed by a code with constant weight. Authors' abstract.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--TWO LAYER ROOFING MATERIAL -U-

AUTHOR--(05)-DANTSIN, M.I., ARONOV, KH.I., CHERNIN, G.B., BLYAKHER, M.A.,  
SHTOFENMAKHER, B.M.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,880  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, BIOLOGICAL  
AND MEDICAL SCIENCES  
TOPIC TAGS--POLYVINYL CHLORIDE, CONSTRUCTION MATERIAL, INSULATING  
MATERIAL, MICROBIAL DEGRADATION, AMMONIUM COMPOUND, FLUORIDE, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0987

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0119856

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0119856

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ROOFING MATERIAL CONSISTS OF LINOLEUM WITH A POLY(VINYL CHLORIDE) FACING LAYER ON A HEAT AND SOUND INSULATING BASE. TO INCREASE THE DURABILITY, THE HEAT AND SOUND INSULATING PROPERTIES, AND THE DECAY RESISTANCE OF THE LINOLEUM, A COMPN. WAS PREPD. CONSISTING OF 60-70PERCENT REPROCESSED WOOL FIBERS, 30-40PERCENT SYNTHETIC FIBERS, AND 2PERCENT (NH SUB4) SUB2 SIF SUB6 BASED ON THE FIBER WT. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF NEW CONSTRUCTION MATERIALS.

UNCLASSIFIED

1/2 037 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--DYNAMIC EQUILIBRIUM OF PROCESSES INVOLVED IN THE FRICTION AND WEAR  
OF METALS -U-  
AUTHOR-(03)-ARONOV, V.A., KOSTETSKIY, B.I., BERSHADSKIY, L.I.  
COUNTRY OF INFO--USSR  
SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 190, FEB. 21, 1970, P.  
1337-1339  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--METAL FRICTION, WEAR RESISTANCE, ELECTRON MICROSCOPY, PLASTIC  
DEFORMATION, DYNAMIC SYSTEM, SURFACE AREA  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1995/1117 STEP NO--UR/0020/70/190/000/1337/1339  
CIRC ACCESSION NO--AT0116583  
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0116583

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION IN WHICH THE SURFACE STRUCTURES OF METALS SUBJECTED TO FRICTION AND THEIR PARAMETERS WERE MEASURED WITH THE AID OF ELECTRON MICROSCOPY. THE ELECTROCHEMICAL POTENTIAL OF SURFACES DURING FRICTION, AND THE ELECTROMAGNETIC PARAMETERS OF THE SURFACE LAYERS WERE ALSO MEASURED. RELATIONS ARE OBTAINED WHICH DETERMINE THE NATURE OF OPTIMUM FRICTION AND WEAR PROCESSES. AN ANALYSIS OF THESE RELATIONS SHOWS THAT FOR GIVEN PARAMETERS OF THE MEDIUM AND MATERIAL THERE EXISTS A CERTAIN RANGE OF LOADS AND SLIP VELOCITIES FOR WHICH THE DESTRUCTION PROCESS ARE LOCALIZED IN THIN SURFACE LAYERS OF SECONDARY STRUCTURES (OF THE ORDER OF SEVERAL HUNDRED ANGSTROMS). WITHIN THIS RANGE, THE PROCESSES OF DESTRUCTION AND RESTORATION OF SECONDARY STRUCTURES ARE IN DYNAMIC EQUILIBRIUM; THE FRICTION SURFACES ARE IN A METASTABLE STATE, DUE TO DYNAMIC EQUILIBRIUM; THE PARAMETERS OF THE DYNAMIC EQUILIBRIUM AND METASTABLE STATES ARE DETERMINED BY THE LOADING CONDITIONS; AND THE STRUCTURAL CHANGES DUE TO PLASTIC DEFORMATION ARE LOCALIZED IN THIN SURFACE LAYERS.

UNCLASSIFIED

USSR

UDC 681.3.06:51

ARONOV, V. I., NEVEL'SKAYA, E. Ya.

"Digital Computer Geological Information Retrieval Systems"

Tr. Vses. N.-i. Geologorazved. Neft. In-t [Works of All-Union Scientific Research and Geological Prospecting Petroleum Institute], No 103, 1971, pp 5-14, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V775 by the author's).

Translation: The problem of creation of an information retrieval system for geological information using digital computers is studied. The capabilities of a medium size machine (such as the BESM-4) to provide for storage and automated retrieval of information are estimated. An algorithm is presented of an information retrieval system designed for the BESM-4, with examples of its utilization.

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USSR

UDC 681.3.06:51

ARONOV, V. I., NEVEL'SKAYA, E. Ya., SAMARIN, V. S.

"Systems for Retrieval and Statistical Processing of Geological Information by Digital Computer"

Tr. Vses. n.-i Geologorazved. Neft. In-t [Works of All-Union Scientific Institute for Geological Prospecting and Petroleum], No 103, 1971, pp 15-27, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V788 by the author's).

Translation: This work is dedicated to description of the algorithm of a system for retrieval and statistical processing of geological information realized on a BESM-4 type machine. The system allows sampling from the initial material according to an assignment and statistical processing of the sample (calculation of estimates of central moments, determination of the type of distribution, performance of multidimensional correlation and regression analysis). The system calls for the use of a broad set of types of coupling and the possibility of complete listing of combinations of parameters and functions of them.

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USSR

UDC 518.5:681.3.06

ARONOV, V. I., BELYAYKOV, N. Ye., GORDIN, V. M., LANDA, T. I., SHIRGINOVA, A. I.

"System for Automatic Processing of Anomalies in Three Dimensional Potential Fields Fixed in a Plane or Nonhorizontal Surface"

Tr. Vses. n.-i Geologorazved. Neft. in-t [Works of All-Union Scientific Research Institute for Geological Prospecting and Petroleum], No 103, 1971, pp 161-180, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V819 by the author's).

Translation: A description is presented of the algorithm and system of programs entitled "Reduction -- perpendicular" for the BESM-4 computer, designed to solve a broad range of problems in prospecting gravimetry and magnetometry: interpolation of observations from an arbitrary network of points to units in a right network, reduction of anomalies on external planes, filtration of random errors and calculation of various transformants of three dimensional potential fields. The technological characteristics of a system of programs and results of experimental calculations of three dimensional theoretical models are presented.

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USSR

UDC 615.616.24-003.  
656.6

ARONOVA, G. V., VELICHKOVSKIY, B. T., RAGOL'SKAYA, F. S.,  
~~STARKOV, P. S.~~

"Problem of Inverse Development of Silicosis Experimentally"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 35-36 (from RZh--Farmakologiya, Khimioterapevticheskiye Sredstva, Toksikologiya, No 3, Mar 73, Abstract No 3.54.875)

Translation: The histologic and biochemical alterations in the lungs of animals subject to the effect of quartz (I) or silica sublimate (II) combined with polyvinoxide (III) were compared. Under the effect of I after three months, expressed silicotic alterations were detected in the lungs which built up subsequently. Under the effect of II, the silicotic alterations were more intense after 15 days than under the effect of I, but after three months, an active process of inverse development of fibrosis was detected which ended by the 17th month. For animals receiving II plus III, the dynamics of the inverse development of silicotic alterations were still more expressed. The dynamics of silicotic alterations in animals receiving I plus III were the same as for those receiving II plus III.

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USSR

UDC 612.112.3.553.62

STARIKOVA, S. K., KATSNEL'SON, B. A., ARONOVA, G. Y., and SHNAYDMAN, I. M.,  
Sverdlovsk Institute of Labor Hygiene and Occupational Diseases, and Kazakh  
Institute of Labor Hygiene and Occupational Diseases, Karaganda

"Participation of Polymorphonuclear Leukocytes in Alveolar Phagocytosis of Quartz  
Dust, and Its Connection With the Biological Aggressiveness of Quartz"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70,  
pp 113-116

Abstract: Experiments were carried out to determine the effects of chronic in-  
halation of quartz dust on rats. Macrophages and polymorphonuclear leukocytes  
were washed out of the lungs by the La Belle and Brieger method, and the ratio be-  
tween them was determined. Polymorphonuclear leukocytes predominated in experi-  
mental animals, while macrophages were more common in the controls since they  
were less damaged from dust. This relationship was confirmed in a special chronic  
inhalation experiment in which the resistance of alveolar macrophages to the  
cytopathogenic effect of quartz was enhanced by treatment with polyvinylpyridine-  
N-oxide. With endotracheal introduction, quartz treated with trimethylchloro-  
silane (which resulted in low fibrinogenic activity) caused a significantly lower  
shift in the cellular composition of lung perfusate toward polymorphonuclear  
leukocytes than nontreated quartz dust. Phagocytosis of quartz dust by

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USSR

STARIKOVA, S. K., et al, Byulleten' Eksperimental'noy Biologii i Meditsiny,  
Vol 70, No 9, Sep 70, pp 113-116

polymorphonuclear leuhocytes appears to be an additional factor in pulmonary self-purification from especially aggressive particles. This process apparently occurs as a result of irritation by quartz dust and by the products of macrophage degeneration. The neutrophils seem to be less sensitive to the cytopathogenic effect than the macrophages.

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USSR

UDC 615.272.2:547.821.4.03:616.24-003.662-092.9

KATSNEL'SON, B. A., BABUSHKINA, L. G., ARONOVA, G. V., STARIKOVA, S. K.,  
POCHASHEV, Ye. N., SHNAYDMAN, I. Ya., POSTOVSKIY, S. N., BORODULINA, S. N.,  
and MALYARENKO, I. S., Sverdlovsk Institute of Industrial Hygiene and  
Occupational Diseases, and Karaganda Institute of Industrial Hygiene and  
Occupational Diseases and Ural Polytechnic Institute, Sverdlovsk

"Experimental Study of the Protective Effect of Polyvinylpyridine-N-Oxide  
Against Silicosis"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Abstract: A polyvinylpyridine-N-oxide polymer with a molecular weight of 117,500 was prepared, and its activity and effectiveness against silicosis were compared with those of a previously prepared polymer of molecular weight 40,000 and the P-204 polymer (Bayer, West Germany). It was found that the new polymer was more effective than either of the other two polymers against intratracheal dust (cristobalite) introduced in rats for a period of 3-1/2 months. Development of silicosis was sharply reduced, as indicated by the decrease in size and number of cellular-dust lumps and the reduction in proliferating reactions, and sclerotic shifts.  
1/2

USSR

KATSNEL'SON, B. A., et al, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Dust elimination from the lungs and inhibition of the silicotic fibrogenesis process are associated with an increase in the resistance of the alveolar macrophages to the cytopathic effect of silicon. It was found that this process was accompanied by a decrease in the diffusion of a lysosome hydrolytic enzyme (acid phosphatase) into the cytoplasm of macrophages due to the effect of silicon, a fact which is attributed to the anti-silicosis effect of the new polyvinylpyridine-N-oxide polymer.

2/2

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USSR

UDC 591.488.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDOVSKIY, V. I.,  
GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z.,  
MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P.,  
KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional  
Morphology, Institute of Evolutionary Physiology and Biochemistry imeni  
I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog *Rana temporaria* in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3,  
May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized *Rana temporaria* eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during  
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USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

2/2

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--DELTA AMINOLEVULINIC ACID HYDROCHLORIDE -U-  
AUTHOR--(03)-ARONOVA, N.I., MAKHOVA, N.N., ZAVYALOV, S.I.  
COUNTRY OF INFO--USSR **A**  
SOURCE--U.S.S.R. 266,773  
REFERENCE--OTKRYTIYA IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(12)  
DATE PUBLISHED--01APR70  
  
SUBJECT AREAS--CHEMISTRY  
  
TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, HYDROLYSIS, CARBOXYLIC  
ACID CHLORIDE  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/1811 STEP NO--UR/0482/70/000/000/0000/0000  
  
CIRC ACCESSION NO--AA0132077  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DELTA AMINOLEVULINIC ACID HYDROCHLORIDE (I) WAS PREPD. BY ACYLATING 2-PHENYL-5-OXAZOLINE WITH ET SUCCINIC ACID CHLORIDE IN AN ORG. SOLVENT OF THE ALKYL PYRIDINE SERIES, SUCH AS PICOLINE, WITH SUBSEQUENT HCL HYDROLYSIS OF THE C ACYL DERIV. AND SEPN. OF I BY TREATING THE REACTION MASS WITH ACETONE.  
FACILITY: ZELINSKII, N. D., INSTITUTE OF ORGANIC CHEMISTRY.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--FAVORABLE EFFECT OF GAMMA,PICOLINE ON C,ACYLATION OF  
2,PHENYL,5,OXAZOLINONE -U-  
AUTHOR-(03)-ARONOVA, N.I., MAKHOVA, N.N., ZAVYALOV, S.I.  
COUNTRY OF INFO--USSR A  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 724  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PYRIDINE, BENZENE DERIVATIVE, ORGANIC AZOLE COMPOUND, STERIC  
HINDRANCE, ACYL RADICAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--1999/1883 STEP NO--UR/0062/70/000/003/0724/0724  
CIRC ACCESSION NO--AP0123671  
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123671

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. FOR ACYLATION OF 2-PHENYL,5,OXAZOLINONE, 4-METHYL,PYRIDINE, RATHER THAN THE 3-ISOMER (CARTER H. E., ET AL., 1953) WAS USED. THE FOLLOWING YIELDS WERE OBTAINED FROM THE ACYLATION RUN WITH INDICATED ROCL (R SHOWN), RESP., IN 4, 3, AND 2-METHYLPYRIDINES AND IN PYRIDINE ITSELF: CH SUB2 CH SUB2 OET 35PERCENT, 8PERCENT, TRACES, 0; CH SUB2 CH SUB2 CO SUB2 ME, 54, 10, 0,0; AND N,C SUB15 H SUB31 34, 21, 0, TRACES. THE FAVORABLE ACTION OF THE 4-ISOMER IS ASCRIBED TO STERIC HINDRANCE AFFORDED BY IT TO THE COMPETING NUCLEOPHILIC ATTACK OF THE ANION OF THE OXAZOLINONE ON THE C ATOM OF THE ACYLPYRIDINIUM CATION. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

KALUGINA, G. N., MATSNEVA, N. M., IBRAGIMOVA, F. I., NOSKOVA, V. A., ARONOVA, Ye.R.  
and YEVSTIGNEYEVA, O. F. Uzbek Scientific Research Institute of Hematology and  
Blood Transfusion

"The Effect of Certain Solutions of Synthetic Polymers on Formed Elements in  
Preserved Blood"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, pp 36-38

Abstract: The suitability of three synthetic polymers -- polyvinyl alcohol,  
carboxymethyl cellulose, and polyvinyl pyrrolidone -- for the preservation of donor  
blood was investigated. The results indicate that these substances prolong the life  
span and maintain a perfect physiological state of erythrocytes for up to 40-45  
days, of leukocytes up to 20-25 days, and of thrombocytes up to 5-7 days. These  
synthetic colloids also speed up the sedimentation rate of blood and thus make it  
possible to separate formed elements from plasma without undue trauma.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SIGNIFICANCE OF STRENGTH AND FREQUENCY OF UNILATERAL CONDITIONED  
STIMULATION FOR ELECTRO DEFENSIVE CONDITIONING -U-  
AUTHOR--ARONOVA, Z.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP  
506-511  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL  
SCIENCES  
TOPIC TAGS--CONDITIONED REFLEX, MOUTH, ELECTRIC DISCHARGE  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/1902 STEP NO--UR/0247/70/020/003/0506/0511  
CIRC ACCESSION NO--AP0120562  
UNCLASSIFIED

2/2 023  
CIRC ACCESSION NO--AP0120562

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRO DEFENSIVE LIFTS OF THE PAW IN RESPONSE TO MECHANICAL AND ELECTRICAL CONDITIONED STIMULATION OF ONE HALF OF THE TONGUE WERE ELABORATED IN SIX DOGS WITH THE TONGUE SPLIT ALONG THE MIDLINE (BY THE ABULADZE METHOD). THE EXPERIMENTS POINTED TO A DIRECT DEPENDENCE OF THE RATE OF CONDITIONING ON THE ABSOLUTE STRENGTH OF THE CONDITIONED STIMULUS; REFLEXES TO CURRENT ARE FORMED FASTER THAN TO MECHANICAL STIMULATION. AT THE SAME TIME THEIR PERSISTENCE PROVED TO BE INVERSELY DEPENDENT BOTH ON THE STRENGTH OF THE CONDITIONED STIMULUS, AND ON THE FREQUENCY OF EXPERIMENTS. CONDITIONED REFLEXES TO MECHANICAL STIMULATION IN DAILY EXPERIMENTS WERE STABLE DURING THE WHOLE PERIOD OF OBSERVATION (FROM TWO TO EIGHT MONTHS). REFLEXES TO CURRENT IN DAILY EXPERIMENTS WERE SOON EXTINCT. A FREQUENCY OF EXPERIMENTS NOT EXCEEDING ONE IN THREE TO FOUR DAYS PROVED TO BE OPTIMAL FOR THEIR STABILIZATION. THUS, THE EXPERIMENTS EXHIBITED PAVLOV'S RULE OF SUMMATION AND WEDENSKY'S LAW OF OPTIMUM AND PESSIMUM OF STRENGTH AND FREQUENCY OF STIMULATION. FACILITY: PAVLOV PHYSIOLOGY DEPARTMENT, INSTITUTE OF EXPERIMENTAL MEDICINE, USSR ACADEMY OF MEDICAL SCIENCES, LENINGRAD.

UNCLASSIFIED

USSR

UDC: 51

ARONOVICH, A. B., LAGOSHA, B. A.

"Concerning a Problem in Optimizing Equipment Loading"

Moscow, Mat. metody resheniya ekon. zadach--sbornik (Mathematical Methods of Solving Economics Problems--collection of works), No 3, "Nauka", 1972, pp 118-124 (from RZh-Kibernetika, No 5, May 73, abstract No 5V719 [from the introduction])

Translation: In many instances equipment loading in production is very uneven. This article attempts to study optimum technological routes which make no a priori connections between articles and machines. These routes are laid out for filling a certain article production quota by a given deadline and are so designed that by maximum loading of some subgroup of the available equipment the remaining equipment can be freed and used in carrying out other production jobs.

1/1

USSR

UDC 537.311.33:546.24'48

ARONS, A.A., MATLAK, V.V., NIKONYUK, YE.S., UST'YANOV, V.I.

"Electrical Properties Of  $\gamma$ -Irradiated P-Type Cadmium Telluride"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 54-66 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B62)

Translation: The effect of  $\gamma$ -irradiation on the electrical properties of p-type CdTe irradiated at room temperature by  $\gamma$ -quanta of  $Co^{60}$  was studied. The investigation was conducted on single crystals of CdTe with concentrations of carriers (up to irradiation) at room temperature from  $5 \cdot 10^{12}$  to  $10^{14} \text{ cm}^{-3}$  and the mobility of holes from 32 to  $9 \text{ cm}^2 \text{ v}^{-1} \text{ sec}^{-1}$ , respectively;  $\gamma$  irradiation of p-type CdTe leads to the appearance of radiation defects of acceptors, increasing the concentration of holes and changing the mechanism of scattering. 10 ill. 7 ref. I.V.

1/1

USSR

UDC 620.793.27

MICAY, L. L., MAL'CHEVSKIY, Ye. G., ~~ABON'S V. I.~~ DRUZHININA, I. P., and VOROB'YEVA, L. P., State Scientific Research and Planning Institute of Pure Metals Industry

"Corrosion Resistance of Vanadium and Its Titanium Alloys in a 3% NaCl Solution"

Moscow, Zashchita Metallov, Vol 7, No 6, Nov-Dec 71, pp 699-700

Abstract: The corrosion resistance and mechanical properties of Va alloyed with 5-20% Ti were investigated. Ingots weighing 10-12 kg, smelted in an electric furnace, were forged and rolled to 2 mm- and 0.3-mm-thick sheets. An increased Ti-content increased the corrosion resistance in a naturally aerated solution. The corrosion rate of the alloy with 5 % Ti is considerably lower than 0.001 mm/year, which is the standard limit of ideal corrosion resistance of metals. Electrochemical investigations carried out in a naturally aerated 3 % HCl-solution revealed that Va and its alloys with Ti are not passivated at potentials of 0.05 - 0.7 v relative to a normal hydrogen electrode, but with increasing Ti-content a decrease of the anodic current takes place. According to measurements of stationary electrode potentials, a refining of potentials of Va and its alloys takes place in time. One illustr., one table.

1/1

USSR

ARONSKIND, S., Candidate of Technical Sciences

"A Colleague of the Diamond" [Graphite]

Moscow, Sotsialisticheskaya Industriya, No 181, 4 Aug 72, p 2

Translation: I have in front of me a black graphite crucible with a metallic luster. If one strikes it lightly, it gives out a melodious sound. On heating, it withstands high temperature. Being a noble metal, it is not afraid of strong acids and can replace platinum. I also saw other amazing articles made of this mineral. They were beautiful, light, and strong.

Today the use of graphite is so widespread that, in all likelihood there is no sector (of the economy) that could not use it to some extent. It has a broad spectrum of uses, i.e., from the production of pencils and lubricants to the production of artificial diamonds and spacecraft parts. The reason for such a wide sphere of use lies in the unique combination of various qualities: high chemical corrosion resistance, which is greater than that of lead and brass, thermal conductivity, capacity for absorbing thermal shocks, plasticity, nonwettability property, and excellent covering, lubricating and other properties.

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USSR

ARONSKIND, S., Sotsialisticheskaya Industriya, No 181, 4 Aug 72, p 2

Possessing a great resistance to the destructive forces of nature, this mineral has retained the structure and form of separation acquired in remote geological eras. The conditions of graphite formation, which carry important information up to our days, are coded in the characteristics of the crystal structure, in the set of accompanying elements, and in other qualities. This information can be used for refining the conditions of ore formation and for forecasting minerals.

Our country has very rich resources of natural graphite. This opens up wide possibilities for using it in the national economy and for export. At the same time, urgent problems, on whose solution depends the efficient use of the resources of this valuable mineral, are put on the agenda.

Following the tradition established when the importance of graphite was underestimated, even now sufficient attention is not given to the exploration and study of graphite ore deposits. The point is that the ores of various deposits and even of the same deposit differ sharply in their commercial properties and in the quality of the mineral contained in them. Also, consumer demands differ. Therefore, the most efficient use of ore and graphite requires a differentiated approach to the explored sections and a detailed study of ores according to their commercial properties.

2/5

USSR

ARONSKIND, S., Sotsialisticheskaya Industriya, No 181, 4 Aug 72, p 2

Since ore reserves containing high-quality graphite are limited, special account should be taken of them and they should be used only as specified.

The second problem is closely connected with the first. It lies in the fact that the producers and consumers of graphite and its explorers are remote from each other. Graphite is in almost general use, but its extraction is under the authority of the Ministry of Construction Materials Industry USSR. This ministry's work has only a slight connection with the use of graphite. The ministry does not have the forces and means necessary for a systematic study of this mineral and its ores, nor does it have the necessary information on the fields of use, consumer demands, and changes in the techniques of graphite production.

At present, rapidly developing industrial sectors have switched to the use of artificial, instead of natural, graphite, whose production is much more expensive. Unfortunately, however, in enterprises, branch institutes, and laboratories dealing with artificial graphites information on the natural mineral is still insufficient. In particular, the fact that in their properties natural and artificial graphite should and can supplement each other is not taken into consideration.

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USSR

ARONSKIND, S., Sotsialisticheskaya Industriya, No 181, 4 Aug 72, p 2

One of the foreign patents for a method of obtaining well-crystallized artificial graphite points out the need for adding a number of catalysts. This is not news for specialists dealing with natural graphite. As a rule, the graphite ores of more than 50 deposits investigated in our laboratory contain the elements mentioned. Therefore, the natural laboratory has long "used" the patents ensuring the most favorable conditions for crystal formation.

The time has come to study the problem of the advisability of merging all enterprises and research organizations dealing with graphite into one scientific production association. The scale and diversity of the problems of an efficient and overall use of natural raw materials and of ensuring graphite production for fully meeting the needs of all sectors is only within the reach of a large-scale research and production organization.

Also, it would be very useful if the Ural Scientific Center of the Academy of Sciences USSR became interested in graphite and undertook the direction of research on the entire complex, i.e., from the genesis and development of the source of raw materials to problems of economics and integration. The institutes forming part of this center and located on the territory of its activity have the necessary personnel and equipment. In  
4/5

USSR

ARONSKIND, S., Sotialisticheskaya Industriya, No 181, 4 Aug 72, p 2

the Urals there is material for investigation. In the detected reserves of graphite ores this region holds first place in the country. Moreover, this region has no shortage of graphite consumers. Incidentally, some of them have their own research laboratories dealing with the use of the natural and artificial material.

Many industries are connected with graphite. Therefore, a solution of the problems mentioned in this article will make it possible to uncover large reserves.

5/5

- 23 -

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--COMPLEX PROTECTIVE RELAY OPERATION SIGNALLING APPARATUS USING NON  
CONTACTING COMPONENTS -U-  
AUTHOR--(04)-PAPERNO, L.B., ARONSON, V.N., POROTSKIY, B.S., VENTSLOVAS,  
V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ELEKT. STANTSII (USSR), VOL. 41, NO. 3, P. 56-9 (1970)  
DATE PUBLISHED-----70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.  
TOPIC TAGS--ELECTRIC RELAY, THYRATRON, SIGNAL ELEMENT, COLD CATHODE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0505 STEP NO--UR/0104/70/041/003/0056/0059  
CIRC ACCESSION NO--AP0135968  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DESCRIPTION IS GIVEN OF THE BASIC PRINCIPLE OF COMPLEX PROTECTIVE RELAY OPERATION SIGNALLING EQUIPMENT EMPLOYING NON CONTACTING COMPONENTS WHICH HAS BEEN UNDER TEST IN THE LITORSK STATE REGIONAL POWER STATION. THE EQUIPMENT CONSISTS OF COLD CATHODE THYRATRON SIGNALLING ELEMENTS, A CENTRAL ACOUSTIC WARNING CIRCUIT AND A CENTRAL VISUAL WARNING CIRCUIT FOR UNRECORDED SIGNALS.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--PYRAZCLIDINE CHEMISTRY. XIV. EFFECT OF ENOLIZATION -U-  
AUTHOR-(C3)-MOLDAVER, B.L., ARONZON, M.YE., PAPIRNIK, M.P.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. GETEROTSIKL. SUEVIN. 1970, (3), 407-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--BENZENE DERIVATIVE, ORGANIC AZOLE COMPOUND, ORGANIC OXYGEN  
COMPOUND, MOLECULAR STRUCTURE, CHEMICAL SYNTHESIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/0443 STEP NO--UR/0409/70/000/003/0407/0409  
CIRC ACCESSION NO--AP0128013  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128013

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING I WERE OBTAINED BY KNOWN METHODS (4, R PRIME1, AND M. P. GIVEN): H, H, 178DEGREES; ET, H, 108DEGREES; BU, H, 104-5DEGREES; PH, H, 184-5DEGREES; ME SUB2 NCH SUB2 CH SUB2, H (II), 228-30DEGREES; PHCH SUB2, H, 133-4DEGREES; AND BU, ME (III), 112DEGREES. ALSO PREPD. WAS IV, M. 84-5DEGREES. I AND IV WERE HYDROGENATED 3 HR OVER RANEY NI AT ROOM TEMP. TO YIELD PHNHCOCRR PRIME1 CONHPPH (V). II (0.25 G) REFLUXED 3 HR IN 20 ML ETOH WITH 1 G RANEY NI GAVE 0.2 G V (R EQUALS H, R PRIME1 EQUALS CH SUB2 CH SUB2 NET SUB2), M. 152-3DEGREES. SIMILARLY, III GAVE V (R EQUALS ME, R PRIME1 EQUALS BU), M. 195-6DEGREES. III (1.25 G) WAS HYDROGENATED 3 HR IN ALK. ETOH SOLN. OVER 4 G RANEY NI AT 20DEGREES TO GIVE PHNHCOCMEBUCO SUB2 H, M. 108-9DEGREES. FACILITY: LENINGRAD. KHIM.-FARM. INST., LENINGRAD, USSR.

UNCLASSIFIED

Aluminum and Its Alloys

USSR

UDC 669.71.053.4

ARONZON, V. L., BERKH, V. I., LEVIN, M. V., LOKSHIN, R. G.

"Automatic Control of Technological Processes of Alumina Production"

Avtomatiz. Proizv. Protsessov. Tsvet. Metallurgii [Automation of Production Processes in Nonferrous Metallurgy -- Collection of Works], Ordzhonikidze, "Ir" Press, 1971, pp 73-75, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G212 by G. Svodtseva).

Translation: In developing algorithms for control of the hydrochemical cycle of  $Al_2O_3$  production from bauxite in the area of the nominal mode, based on the shortage of  $Al_2O_3$ , a control strategy was developed calling for two possible operating modes of the automated control system: the mode of independent control of individual sectors of the hydrochemical cycle and the mode of centralized control. In both modes, control is conducted by a two-stage system. In the independent control mode, a universal computer checks the condition of production by cyclical interrogation of the primary parameters. A special algorithm has been developed, allowing timely determination of the location and reasons for disruptions in the technological mode. Algorithms for optimization of the hydrochemical cycle of production of  $Al_2O_3$  by the Bayer method have been developed, as well as algorithms for optimization of individual conversions in 1/2

USSR

UDC 669.71.053.4

ARONZON, V. L., BERKH, V. I., LEVIN, M. V., LOKSHIN, R. G., Avtomatiz. Proizv. Protssosov. Tsvet. Metallurgii, Ordzhonikidze, "Ir" Press, 1971, pp 73-75.

alumina plants, based on mathematical models of the technological processes being controlled.

2/2

USSR

UDC 669.71.053.4

ARONZON, V. L., GANZBURG, YA. D., LEVIN, M. V., LOKSHIN, R. G., FINKEL'SHTEYN, L. I.

"Algorithmization of Control of the Section for Preparing the Charge of the Alumina Shop at a Nepheline Plant"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrod. prom-sti  
(Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 28-34 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G136)

Translation: Principles are formulated for a production raw material input control which insures stabilization and synchronization of material flows with observation of the required quality of the charge obtained. Control algorithms for individual sections are developed on this basis: bins, mills, a repulping machine, and a correction unit. There is 1 illustration.

1/1

USSR

UDC 517.4

ADAMYAN, V. M., AROV, D. Z., and KREYN, M. G.

"Analytic Properties of Schmidt Pairs of Hankel Operators and the Generalized Schur-Takagi Problem"

Moscow, Matematicheskii Sbornik, Novaya Seriya, Vol 86(128), No 1(9), Sep71, pp 34-75

Abstract: Infinite Hankel Matrices and associated approximations problems are examined. Suppose  $\Gamma = (\gamma_{j+k-1})_{j,k=1}^{\infty}$  is a Hankel matrix bounded in  $\ell_2$ .

The sections of the article are as follows: 0. Formulation of the problem; principal results. 1. Infinite Hankel matrices and displacement operator in  $\ell_2$ . 2. Canonical solutions of the generalized Schur-Takagi problem; completion of proofs of theorem 0.1 and 0.2. 3. Description of all solutions of the generalized Schur problem in the case  $\rho > \|\Gamma\|$ . 4. Generalized Rouché's Theorem. 5. Description of all solutions of the problem  $c^{[K]}$  when  $K > 0$ . 6. Classical interpolation problems. 7. Continuum analog.

1/1

- 14 -

USSR

ADAMYAN, V. M., AROV, D. Z., and KREYN, M. G.

"Infinite Hankel Block-Matrices and Related Continuation Problems"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Matematika, Vol 6, No 2-3, 1971, pp 87-112

Abstract: The authors study a bounded, infinite Hankel block-matrix

$\Gamma = (\gamma_{j+k-1})_1^\infty$ , the  $\gamma_j$  blocks being bounded linear operators from the Hilbert space  $N_1$  to the Hilbert space  $N_2$  ( $\gamma_j \in [N_1, N_2]$ ,  $j = 1, 2, \dots$ ). They term the matrix  $\tilde{\Gamma} = (\tilde{\gamma}_{j+k-1})_{-\infty}^\infty$  a full  $(\Gamma, \rho)$ -continuation if  $\gamma_j = \tilde{\gamma}_j$  for  $j = 1, 2, \dots$  and  $\|\tilde{\Gamma}\| \leq \rho$ . The set of these continuations is not empty if  $\rho \geq \|\Gamma\|$  and becomes infinite if  $\rho > \|\Gamma\|$ . A special "one-step  $(\Gamma, \rho)$ -continuation" algorithm permits constructing each continuation of the set. The uniqueness theorem is established for the case  $\rho = \|\Gamma\|$ . The work was motivated by the related problem of finding an essentially bounded operator-valued function  $F(\zeta) (F(\zeta) \in [N_1, N_2])$  on the circle  $|\zeta| = 1$  with certain negative Fourier  $1/2$

USSR

ADAMYAN, V. M., et al., Izvestiya Akademii Nauk Armyanskoy SSR, Matematika, Vol 6, No 2-3, 1971, pp 87-112

coefficients  $c_j(F) = \delta_j$  ( $j \gg 1$ ) and with  $\|F\|_\infty < \rho$ . Explicit formulas are given to describe all such functions of  $F$  when  $\rho > \|r\|$  and  $\dim N_k < \infty$  ( $k = 1, 2$ ). The authors divide the article into six sections, each of which is discussed in detail with proofs given. The article contains 17 bibliographic entries.

2/2

- 15 -

USSR

UDC 542.91+547.853.3

AROYAN, A. A., and KRAMER, M. S., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"Pyrimidine Derivatives. XXVIII. Diethyleneimides of 4-Chloro-5-(p-alkoxybenzyl)-6-methyl-2-pyrimidylamidophosphoric Acids"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971 pp 918-923

Abstract: The investigation described was a continuation of work by the authors (cf. Arm. Khim. Zh., 23, 268, 1970) on the synthesis of derivatives of 5-(p-alkoxybenzyl)pyrimidylamidophosphoric acids with possible antitumor and mutagenic activity. By reacting 2-amino-4-chloro-5-(p-alkoxybenzyl)-6-methylpyrimidines (alkyl = Me, Et, Pr, i-Pr, Bu, i-Bu) with  $\text{PCl}_5$ , the corresponding 2-trichlorophosphazopyrimidines were synthesized, which on treatment with  $\text{HCOOH}$  yielded dichlorides of 2-pyrimidylamidophosphoric acids and upon the reaction with two moles morpholine followed by hydrolysis formed the dimorpholides of the 2-pyrimidylamidophosphoric acids. The reaction of the acid dichlorides with ethyleneimine led to the diethyleneimides of the corresponding acids. By reacting the acid dichlorides with diethylamine, bis-(beta-chloroethyl)amine, and  $\text{MeOH}$ , derivatives of the acids in which both Cl  $1/2$

USSR

AROYAN, A. A., and KRAMER, M. S., Arayanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 918-923

atoms in the acid chloride groups were replaced with  $\text{NEt}_2$ ,  $\text{N}(\text{CH}_2\text{CH}_2\text{Cl})_2$ , or OMe groups were obtained. The acid dichlorides that were synthesized (6 compounds) and the diethyleneimides that were prepared from them (6 compounds) are listed in tables together with their melting points.

2/2

USSR

UDC 542.91+547.853.3

KALDRIKYAN, M. A., and AROYAN, A. A., Institute of Fine Organic Chemistry,  
imeni A. L. Mndozhoyan, Academy of Sciences Armenian SSR, Yerevan

"Pyrimidine Derivatives. XIX.. Some N-Substituted Thiobarbituric and  
Barbituric Acids"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 913-917

Abstract: With the view of studying the physiological properties of the compounds obtained, N-(p-alkoxybenzyl)thioureas were reacted with malonic ester in the presence of NaOEt, whereupon N-(p-alkoxybenzyl)thiobarbituric acids formed. The latter were converted by the action of  $H_2O_2$  into N-(p-alkoxybenzyl)barbituric acids. The N-(p-alkoxybenzyl)thioureas had been prepared by reacting p-alkoxybenzyl thiocyanates with  $NH_3$ . By the reaction of phenylthiourea with p-alkoxybenzylmalonic esters in the presence of NaOEt, N-phenyl-5-(p-alkoxybenzyl)thiobarbituric acids were obtained. These thiobarbituric acids were converted into methylmercapto derivatives by the action of MeI. The compounds synthesized are listed in tables together with their melting points.

1/1

Nitrogen Compounds

USSR

UDC 542.91+547.853.3

KHAZHAKYAN, L. V., KRAMER, M. S., AVOYAN, R. S., AROYAN, A. A., Institute of Analytical Organic Chemistry im. A. L. Mindzhoyan of the Armenian SSR Academy of Sciences (Yerevan)

"Pyrimidine Derivatives. XXVII. Study of the Tautomerism in Some Substituted 5-(p-alkoxybenzyl)pyrimidines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 12, 1971, pp 1079-1080

Abstract: Infrared spectrascopy was used to study the structure of 5- and 6-(p-alkoxybenzyl)pyrimidines, potentially tautomeric compounds. Data are presented indicating an amino structure for 2-methyl-4-amino-5-(p-alkoxybenzyl)-6-methylpyrimidines, a keto structure for 4-hydroxypyrimidine, a diketo structure for the uracil derivatives with some amount of the hydroxy configuration along with the basic dihydroxy configuration and mercapto-hydroxy structure for 2-mercapto-4-hydroxy-5-(p-alkoxybenzyl)-6-methylpyrimidines. The presented article is only a summary of a report, the complete text is available at the All-Union Institute of Scientific and Technical Information, Registration No 3361-71, 18 August 1971.

1/1

USSR

UDC 542.91+547.853.3

KRAMER, M. S., and AROYAN, A. A., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Pyrimidine Derivatives. XVI. Diethylenimides of 2,6-Dimethyl-5-(p-alkoxybenzyl)pyrimidyl-4-amidophosphoric Acids"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 3, 1970, pp 268-273

Abstract: Previous experiments by the authors on antitumorigenic activity of 2,6-dimethyl-4-oxy-5(p-alkoxybenzyl)pyrimidines showed that inhibition of sarcoma 45 growth varied from 30 to 55%, and they were ineffective against sarcoma 37 and M1 growth. In an attempt to increase the metabolic activity of the pyrimidines and find new compounds with antineoplastic properties, the author introduced the ethylamino group into the pyrimidine structure, forming the diethylenimides of 2,6-dimethyl-5-(p-alkoxybenzyl)pyrimidyl-4-amidophosphoric acids as well as 2,6-dimethyl-4-amino- and substituted amino-5-(p-alkoxybenzyl)pyrimidines. The latter compounds were synthesized by action of an excess of an ethanol solution of ammonia on 4-chloropyrimidines. The amino derivatives are in the form of white crystals obtained in 65-70% yields.

1/2

USSR

KRAMER, M. S., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 23,  
No 3, 1970, pp 268-273

They are moderately soluble in ether, benzene, and chloroform. Diethylenimides of 2,6-dimethyl-5-(p-alkoxybenzyl)pyrimidyl-4-amidophosphoric acids were obtained by the action of ethylenimine on phosphorus halides in benzene solution in the presence of triethylamine. Yields are 60-65%, and the substances are crystalline, readily soluble in ethanol, chloroform, and ethylacetate, and insoluble in water, acetone, and petroleum ether. The antineoplastic properties of the compounds were not reported by the authors.

2/2

USSR

A  
UDC: 542.91 + 547.853.3

KRAMER, M. S., and AROYAN, A. A., Institute of Fine Organic Chemistry,  
Yerevan, Academy of Sciences Armenian SSR

"Pyrimidine Derivatives. XIV. Synthesis and Reactions of 2,6-Dimethyl-4-hydroxy-5-(p-alkoxybenzyl)-pyrimidines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 1, 1970, pp 69-73

Abstract: Cyclization of equimolar quantities of p-alkoxybenzylacetoacetic esters with acetamide hydrochloride in the presence of sodium methoxide gives 2,6-dimethyl-4-hydroxy-5-(p-alkoxybenzyl)-pyrimidines in 65-70% yields. The hydroxypyrimidines are crystalline compounds insoluble in water and organic solvents. Heating 2,6-dimethyl-4-hydroxy-5-(p-alkoxybenzyl)-pyrimidines with excess POCl<sub>3</sub> gives 4-chloropyrimidines in 85-90% yields. Reaction of 4-chloropyrimidines with sodium methoxide in methanol replaces the chlorine atom with a methoxy group, yielding 55-60% of 2,6-dimethyl-4-methoxy-5-(p-alkoxybenzyl)-pyrimidines.

1/1

USSR

UDC: 542.91 + 547.781.3

~~AROYAN, A. A.~~, and IRADYAN, M. A., Institute of Fine Organic Chemistry,  
Yerevan, Academy of Sciences Armenian SSR

"2-(2'-Alkoxy-5'-chlorobenzyl)- $\Delta^2$ -imidazolines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 2, 1970, pp 185-192

Abstract: Because many imidazolines are of interest due to their biological properties, being good sympatomimetic agents and antihistamines, the authors synthesized a series of such compounds with the goal of studying their structure-activity relationship. However, no biological data are reported in this paper. Reaction of iminoester or amidine hydrochlorides of 2-alkoxy-5-chlorophenylacetic acid with ethylenediamine (a 1:1 ratio of reagents, or a slight excess of the diamine) gave the series of imidazolines -- white crystalline compounds easily soluble in water, ethanol or acetone, and poorly soluble in methyl-ethyl ketone.

1/1

USSR

A

UDC: 541.69 + 542.91 + 547.416

GARIBDZHANYAN, B. T., STYEPANYAN, G. M., IRADYAN, M. A., and AROYAN, A. A.,  
Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian  
SSR

"Synthesis and Biological Studies of Some Novel Substituted Benzyl-bis-  
( $\beta$ -chloroethyl)-amines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 2, 1970, pp 166-172

Abstract: The authors synthesized a series of 2-alkoxy-5-chlorobenzyl-chlorides by chloromethylation of p-alkoxychlorobenzene with paraformaldehyde and HCl in presence of anhydrous zinc chloride, and reacted it with diethanol amine in dioxane to obtain 2-alkoxy-5-chlorobenzyl-bis-( $\beta$ -hydroxyethyl)-amines, which were eventually converted to hydrochlorides. Biological properties of these compounds and of 3-chloro-4-alkoxybenzyl-bis-( $\beta$ -chloroethyl)-amines obtained earlier were studied on rats and mice, and it was determined that all of them were more toxic than corresponding bromo- derivatives. Some of them also exhibited somewhat higher antitumor activity.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--2 (2,ALKOXY,5,CHLOROBENZYL),2,IMIDAZOLINES -U-  
AUTHOR-(02)-AROYAN, A.A., IRADVAN, M.A.  
COUNTRY OF INFO--USSR A  
SOURCE--ARM. KHIM. ZH. 1970, 23(2), 185-92  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY  
TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ORGANIC  
AZOLE COMPOUND, CHEMICAL SYNTHESIS, HISTAMINE, INHIBITION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0298 STEP NO--UR/0426/70/023/002/0185/0192  
CIRC ACCESSION NO--AP0119287  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119287

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPS. (I) WERE PREPD. AS ANTIHISTAMINES. BU, 90, 128-9DEGREES. HEATING 0.05 MOLE III, 3.3 G ANHYD. (H SUB2 NCH SUB2)SUB2 (V), AND 20 ML ETOH, FOLLOWED BY TREATMENT WITH HCL GAS TO THE CONGO RED END POINT YIELDED I.HCL, ALSO OBTAINED ON HEATING 0.012 MOLE IV, 0.78 G ANHYD. V, AND 10 ML ETOH. THE FOLLOWING I.HCL WERE PREPD. (R, PERCENT YIELD, AND M.P. GIVEN: SHOWN ON MICROFICHE. FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC:621.039.516.338.4

*A*  
ARSEN'YEV, YU. D., RADCHENKO, S. V., and CHERNYAYEV, V. A.

"Multiparameter Optimization of Nuclear Power Stations With Desalination of Sea Water by the Base Point Method"

Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, p 418

Abstract: Dual-purpose desalination installations used with atomic electric power stations are characterized by complex, physically interrelated parameters. Dimensionless complexes summarizing all initial cost and technical indicators can be composed by approximating each expenditure component with an equation. The individual functions can be represented for computer calculation as polynomials, and optimization is performed for each parameter individually with subsequent refinement of the solution by iterations. The system of iterations is constructed so that when one of the parameters is optimized, the optimization depends on the base values of the other parameters but not on the base value of the one being optimized.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--PYRIMIDINE DERIVATIVES. XIV. SYNTHESIS AND SOME REACTIONS OF  
2,6,DIMETHYL,4,HYDROXY,5,(P,ALKOXYBENZYL)PYRIMIDINES -U-  
AUTHOR-(02)-KRAMER, M.S.; AROYAN, A.A. A  
COUNTRY OF INFO--USSR  
SOURCE--ARM. KHIM. ZH. 1970, 23(1), 69-73  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PYRIMIDINE, CHEMICAL SYNTHESIS, HYDROXYL RADICAL, BENZENE  
DERIVATIVE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0604 STEP NO--UR/0426/70/023/001/0069/0073  
CIRC ACCESSION NO--AP0119521  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119521

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

2,6,DIMETHYL,4,HYDROXY,5,(P,ALKOXYBENZYL)PYRIMIDINES (I) WERE SYNTHESIZED FROM THE CORRESPONDING P,ALKOXYBENZYL ACETOACETATES (II) BY TREATMENT WITH ACETAMIDINE,HCL (III) IN THE PRESENCE OF MEONA. TO A COOLED SOLN. OF MEONA PREPD. FROM 4.6 G NA AND 100 ML MEON, 9.45 G III AND 0.1 MOLE II WERE SUCCESSIVELY ADDED, AND THE MIXT. HEATED AND STIRRED ON A WATER BATH 2-3 HR TO GIVE THE FOLLOWING I (ALKYL IN THE ALKOXY GROUP, PERCENT YIELD, AND M.P. GIVEN): ME, 69.5, 168-90DEGREES; ET, 64.8, 189-90DEGREES; PR, 71.6, 155-6DEGREES; ISO-PR, 72.0, 149-50DEGREES; BU, 75.4, 165-6DEGREES; AND ISP-BU, 70.5, 145-6DEGREES. TO 30 G FRESHLY DISTD. POCL SUB3, 1.58 G C SUB5 H SUB5 N AND 0.02 MOLE I WERE ADDED, AND THE MIXT. WAS HEATED ON A WATER BATH 10-12 HR TO GIVE THE FOLLOWING 2,6,DIMETHYL,4,CHLORO,5,(P,ALKOXYBENZYL)PYRIMIDINES (IV) (ALKYL IN THE ALKOXY GROUP, PERCENT YIELD, B.P.-L. MM, AND M.P. GIVEN): ME, 85.6, -, 95-6DEGREES; ET, 90.5, -, 89-90DEGREES; PR, 93.3, -, 78-9DEGREES; ISO-PR, 87.4, 184-5DEGREES, 90-2DEGREES; BU, 75.0, 190-2DEGREES, 40-1DEGREES; AND ISO-BU, 89.5, -, 110-11DEGREES. A MIXT. OF A SOLN. OF MEONA PREPD. FROM 2.3 G NA AND 30 ML MEON AND 0.01 MOLE IV WAS HEATED ON A WATER BATH 1 HR TO GIVE THE FOLLOWING 2,6,DIMETHYL,4,METHOXY,5,(P,ALKOXYBENZYL)PYRIMIDINES (ALKYL IN THE ALKOXY GROUP, PERCENT YIELD, B.P.-L. MM, AND M.P. GIVEN): ME, 56.5, 145-7DEGREES, -; ET, 53.2, 152-5DEGREES, 51-2DEGREES; PR, 60.0, 166-8DEGREES, 45-6DEGREES; ISO-PR, 62.9, 157-8DEGREES, 65-6DEGREES; BU, 57.5, 175-8DEGREES, 47-8DEGREES; AND ISO-BU 58.7, 176-8DEGREES, 42-3DEGREES.

FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SYNTHESIS AND BIOLOGICAL STUDY OF SOME NEW SUBSTITUTED BENZYLBIIS  
(BETA CHLOROETHYL) AMINES -U-  
AUTHOR-(04)-GARIBOZHANYAN, B.T., STEPANYAN, G.M., IRADYAN, M.A., AROYAN,  
A.A.  
COUNTRY OF INFO--USSR  
SOURCE--ARM. KHIM. ZH. 1970, 23(2), 166-72  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ANTITUMOR DRUG EFFECT, CHEMICAL SYNTHESIS, CHLORINATED ORGANIC  
COMPOUND, BENZENE DERIVATIVE, ALKOXIDE, AMINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0789 STEP NO--UR/0426/70/023/002/0166/0172  
CIRC ACCESSION NO--AP0119696  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

(2,ALKOXY,5,CHLOROBENZYL) BIS(BETA,CHLOROETHYL) AMINES (I) AND THEIR 4,ALKOXY,3,CHLOROBENZYL ISOMERS (II) WERE PREPD. AS ANTITUMOR AGENTS AND COMPARED WITH THE BROMO ANALOGS. THE CL DERIVS, WERE MORE TOXIC THAN THE BR ANALOGS. LARGER ALKOXY GROUPS IN I WERE LESS TOXIC, BUT IN II THE EFFECT OF LARGER ALKOXY GROUPS WAS THE REVERSE. SOME CHLORO DERIVS. WERE BIOL. MORE ACTIVE THAN THE BROMO COMPDs. 2,ALKOXY,5,CHLOROBENZYL CHLORIDES (III) WERE PREPD. BY CHLOROMETHYLATION OF N,ALKOXYCHLOROBENZENES WITH PARA FORMALDEHYDE AND HCL OVER ZNCL SUB2. (III) (0.1 MOLE), 0.2 MOLE HN(CH SUB2 CH SUB2 OH) SUB2, AND 40-50 ML DIOXANE GAVE 2,5,ROCLC SUB6 H SUB3 CH SUB2 N(CH SUB2 CH SUB2 OH) SUB2 (IV). IV (0.1 MOLE) IN 50 ML C SUB6 H SUB6 WITH 0.4 MOLE SOCL SUB2 IN C SUB6 H SUB6 GAVE I.HCL. FACILITY: INST. TONKDI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--15OCT70  
TITLE--SYNTHESES BASED ON 4,ALKOXYBENZYL AND 4,ALKOXYPHENYLAMINES -U-  
AUTHOR-(03)-IRADYAN, M.A., MINASYAN, L.V., AROYAN, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--ARM. KHIM. ZH. 1970, 23(1), 54-60  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL SYNTHESIS, ALKOXIDE, BENZENE DERIVATIVE, AMINE,  
IMIDAZOLE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1450 STEP NO--UR/0426/70/023/001/0054/0060  
CIRC ACCESSION NO--AP0116889  
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70  
CIRC ACCESSION NO--AP0116889  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RHO, RC SUB6 H SUB4 OF SUB2 NHC  
SUB6 H SUB4 OR PRIME1 RHO (I) WERE PREPD. BY HEATING 0.8 MOLE OF A  
4, ALKOXYPHENYLAMINE WITH 0.2 MOLE 4, ALKOXYBENZYL CHLORIDE 6-8 HR (R, R  
PRIME1, PERCENT YIELD, B.P. (1 MM), M.P., AND M.P. CHL SALT GIVEN):  
(CONTAINED ON MICROFICHE). FACILITY: INST. TONKDI ORG. KHIM.,  
EREVAN, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CHLOROMETHYLATION OF 4,ALKOXYPHENYLAALKANECARBOXYLIC ACID ESTERS  
-U-  
AUTHOR--(02)-AROYAN, A.A., DARBINYAN, V.V.  
COUNTRY OF INFO--USSR *A*  
SOURCE--ARM. KHIM. ZH, 1970, 23(2), 158-65  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--METHYLATION, CARBOXYLIC ACID ESTER, BENZENE DERIVATIVE,  
ALKOXIDE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1816 STEP NO--UR/0426/70/023/002/0158/0165  
CIRC ACCESSION NO--AP0123606  
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. I WERE PREPD. BY ALCOHOLYSIS OF THE RESP. CYANIDES. THUS, 0.5 MOLE 4,ALKOXYBENZYL CYANIDE WAS REFLUXED IN 200 ML ABS. MECH WITH DRY HCL PASSING THROUGH THE SYSTEM. I (R EQUALS ME, N EQUALS 2) WAS PREPD. FROM ET 4,METHOXYBENZYL MALONATE BY CONSECUTIVE HYDROLYSIS, DECARBOXYLATION, AND REESTERIFICATION. I ARE GIVEN IN THE FIRST TABLE. A COOLED (MINUS 4 TO 0 DEGREES) MIXT. OF 0.1 MOLE I, WITH 15 G 40PERCENT SOLN. CH SUB2 O, 30 ML HCL, AND 30 ML C SUB6 H SUB6 WAS TREATED WITH DRY HCL FOR 30 MIN. THE STIRRING WAS CONTINUED AT ROOM TEMP. FOR 3 HR. THE PRODUCTS, II (R PRIME1 EQUALS CL, R PRIME2 EQUALS OME) ARE TABULATED IN THE SECOND TABLE. I (R PRIME1 EQUALS AMINO, R PRIME2 EQUALS OME) WERE PREPD. BY MIXING 0.03 MOLE OF A CORRESPONDING ESTER (II) (R PRIME1 EQUALS CL, R PRIME2 EQUALS OME), 0.07 MOLE SECONDARY AMINE, AND 50 ML ABS. C SUB6 H SUB6, AND REFLUXING FOR 10-12 HR. WORK UP GAVE II (R PRIME1 EQUALS AMINO, R PRIME2 EQUALS OME) TABULATED IN THE SECOND TABLE. THE HYDRAZIDES WERE PREPD. BY REFLUXING 0.01 MOLE OF THE CORRESPONDING II (R PRIME1 EQUALS AMINO, R PRIME2 EQUALS OME) WITH 0.07 MOLE H SUB2 NNH SUB2, FOR 2 HR. WORK UP GAVE II (R PRIME1 EQUALS AMINO, R PRIME2 EQUALS NNH SUB2) TABULATED IN THE SECOND TABLE. FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PYRIMIDINE DERIVATIVES. XVI. 4,P,ALKOXYPHENYL,  
2,SIGMA,DIMETHYL,4,PYRIMIDINYLAMINOPHOSPHONIC DIAZIRIDIDES -U-  
AUTHOR--(02)-KRAMER, M.S., AROYAN, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--ARM. KHIM. ZH. 1970, 23(3), 268-73  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PYRIMIDINE, AMINE, ORGANIC PHOSPHORUS COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0744 STEP NO--UR/0426/70/023/003/0268/0273  
CIRC ACCESSION NO--AP0136182  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136182

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 0.01 MOLE  
2,6-DIMETHYL,4-CHLORO,5-(P,ALKOXYBENZYL)PYRIMIDINE (I), 0.03 MOLE R SUB2  
NH, AND 30 ML ETOH HEATED AT 150-60DEGREES IN AN AUTOCLAVE 5-6 HR GAVE  
THE FOLLOWING: SHOWN ON MICROFICHE. A MIXT. OF 0.01 MOLE I AND 30 ML  
ETOH CONTG. 0.85 G NH SUB3 HEATED AT 170-50DEGREES IN AN AUTOCLAVE 10-12  
HR GAVE THE FOLLOWING: SHOWN ON MICROFICHE. A MIXT. OF 0.01 MOLE III  
AND 8-9 ML POCL SUB3 HEATED AT 130-40DEGREES 5-6 HR, EVAPD. IN VACUO,  
AND THOROUGHLY WASHED WITH ET SUB2 O GAVE THE CORRESPONDING IV, WHICH,  
WHEN TREATED WITH 2 G ETHYLENIMINE AND 5 G ET SUB3 N GAVE THE FOLLOWING:  
SHOWN ON MICROFICHE. FACILITY: INST. TONKOI ORG. KHIM.,  
EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 621.396.75

ARRO, I. O., IVANOV, N. I.

"Noise Immunity of a Two-Channel Automatic Radio Direction Finder with Simultaneous Comparison of Amplitudes"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 2), Leningrad, 1970, pp 42-49 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G89)

Translation: Expressions are found for the provisional distribution function of the tangent (bearing) for various situations. An example of calculating the error in the degree of variance of the bearing is presented. There is one illustration and a 16-entry bibliography.

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USSR

UDC 621.396.75

ARRO, I. O., VOLYNKIN, G. N.

"Decreasing the Errors of a Two-Channel Short-Wave Radio Direction Finder with Simultaneous Comparison of Amplitudes Caused by Multiple Waves by Integrating the Channel Voltages"

Materialy nauchno-tekhn. konferentsii. Leningr, elektrotekhn. in-t svyazi. Vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute, Vyp. 2), Leningrad, 1970, pp 73-76 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G90)

Translation: The possibilities of decreasing the errors of a radio direction finder caused by multiple beams by integrating the channel voltages over the envelope are analyzed. Expressions are obtained for calculating the magnitude of the errors.

USSR

A UDC: 621.317 .335.3

ARSAYEV, I. Ye.

"On Errors in Measuring the Dielectric Constant of Materials by the Radio Transillumination Method"

Dokl. Nauchno-tekhn. seminar "Metrol. v radioelektron." Tezisy, Ch. 1 (Reports of the Scientific and Technical Seminar on Metrology in Radio Electronics. Summaries, Part 1), Moscow, 1970, pp 83-88 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A216)

Translation: The author notes the lack of precision of the theory which is generally taken as a basis for interpretation of the results of measurements on radio transillumination of dielectrics. An analysis is made of the effect which the directed properties of the transmitting and receiving antennas and the distance between them have on the transmission ratio between the channels of antennas separated by an infinite uniform plate (dielectric constant  $\epsilon$ ,  $\mu = 1$ ) with thickness  $d$ . Corrections which are introduced account for the specificity of the primary wave, the astigmatism of the wave behind the layer, etc. The results are given in the form of formulas and graphs. Bibliography of 4 titles. E. L.

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USSR

UDC 669.74'782'891.018.9

ARSENISHVILI, A. YU., DZHAPARIDZE, N. V., DZIDZISHVILI, R. N., KATAMADZE, N. P.,  
TSKITISHVILI, A. A., CHOLOKAVA, M. V., CHKHENDZE, E. A.

"Mastery of Industrial Preparation of the Silicon-Manganese-Calcium Alloy"

V sb. Marganets. Dobycha, obogashch. i pererabotka (Manganese. Extraction, Beneficiation and Refining -- collection of works), No 3 (28), Tbilisi, 1971, pp 47-59 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G261)

Translation: Results of three series of experiments in making Mn alloy with Si and Ca in 2,500 and 11,150 kilovolt ampere electric furnaces are discussed. The initial charge comprised a mixture of slag obtained when making medium carbon FeMn with quartzite, lime, and coke breeze. The necessary conditions for normal conduct of the alloy-making process are the following: exact weighing of the charge components and observation of the schedule for discharge of the alloy from the electric arc furnace. The following extraction in the alloy was obtained: 91% Mn, 73.38% Si, 32.93% Ca, 41.1% Al, 29.9% Mg, and 54.2% P with an alloy composition of 23.01% Mn, 54.13% Si, 9.7% Ca, 1.58% Al, 0.79% Mg, and 0.015% P. The consumption of electric power per ton of alloy was 13,195 kilowatt-hours. There are 6 tables.

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